In the Claims

1-64. (Cancelled)

65. (Previously Presented) A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna;

a flexible conductive path disposed on the substrate, the conductive path including a first portion and a second portion;

an RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the conductive path and to the antenna using a conductive adhesive, the integrated circuit including a processor, a modulated backscatter transmitter coupled to the processor, a receiver coupled to the processor, and a wake-up circuit coupled to the receiver and configured to selectively activate the receiver; and

a thin profile battery conductively bonded with the second portion of the conductive path by a conductive adhesive including a silane.

66. (Previously Presented) The device of claim 65 wherein the wake-up circuit is coupled to the processor and is configured to determine when a valid command is being received and to supply electrical power from the battery to the processor in response thereto.

67. (Previously Presented) A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna;

a flexible conductive path disposed on the substrate, the conductive path including a first portion and a second portion;

an RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the conductive path and to the antenna using a conductive adhesive, the integrated circuit including a processor, a modulated backscatter transmitter coupled to the processor, a receiver coupled to the processor, and a wake-up circuit coupled to the receiver and configured to selectively activate the receiver; and

a thin profile battery conductively bonded with the second portion of the conductive path by a conductive adhesive;

wherein the integrated circuit includes a frequency lock loop configured to supply clock signals to the receiver and transmitter, the frequency lock loop including a current source having a thermal voltage generator, and a current controlled oscillator having a plurality of selectively engageable current mirrors multiplying the current of the current source.

68. (Previously Presented) A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna disposed on the substrate;

flexible conductive paths disposed on the substrate, the conductive paths including a first portion and a second portion;

an RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the conductive paths and to the antenna; and

a thin profile battery conductively bonded with the second portion of the conductive paths by a conductive adhesive including a silane.

69. (Previously Presented) The device of claim 68 wherein the integrated circuit includes a processor, a transmitter coupled to the processor, and a receiver coupled to the processor.

70. (Previously Presented) The device of claim 68 wherein the integrated circuit includes a processor, a modulated backscatter transmitter coupled to the processor, and a receiver coupled to the processor.

71. (Previously Presented) The device of claim 70 wherein the integrated circuit includes a wake-up circuit configured to selectively activate the receiver.

72. (Previously Presented) The device of claim 70 wherein the integrated circuit includes a wake-up circuit, the wake-up circuit being coupled to the receiver and the processor and being configured to periodically activate the receiver, the wake-up circuit being configured to

determine when a valid command is being received and to supply electrical power from the battery to the processor in response thereto.

73. (Currently Amended) A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna disposed on the substrate;

flexible conductive paths disposed on the substrate, the conductive paths including a first portion and a second portion;

[[a]] an RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the conductive paths and to the antenna, wherein the integrated circuit includes a processor, a modulated backscatter transmitter coupled to the processor, and a receiver coupled to the processor; and

a thin profile battery conductively bonded with the second portion of the conductive paths by a conductive adhesive;

wherein the integrated circuit includes a frequency lock loop configured to supply clock signals to the receiver and transmitter, the frequency lock loop including a current source having a thermal voltage generator, and a current controlled oscillator having a plurality of selectively engageable current mirrors multiplying the current of the current source.

74. (Currently Amended) A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna disposed on the substrate;

flexible conductive paths disposed on the substrate, the conductive paths including a first portion and a second portion;

[[a]] an RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the conductive paths and to the antenna; and

a thin profile battery conductively bonded with the second portion of the conductive paths by a conductive adhesive;

wherein the integrated circuit includes a microprocessor, a receiver configured to receive radio frequency commands from an interrogation device and having an output coupled to the microprocessor, a transmitter configured to transmit a signal identifying the device to the

interrogator in response to a command from the microprocessor, and a wake-up timer circuit coupled to the receiver and configured to determine if a signal received by the receiver is a radio frequency command from the interrogation device, the integrated circuit at times switching between a sleep mode and a receiver-on mode, more power being consumed in the receiver-on mode than in the sleep mode, the integrated circuit switching from the receiver-on mode to a microprocessor-on mode in response to receiving a signal indicating that a communication received by the receiver is a radio frequency command from the interrogation device.

75. (Currently Amended) A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna disposed on the substrate;

flexible conductive paths disposed on the substrate, the conductive paths including a first portion and a second portion;

[[a]] an RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the conductive paths and to the antenna; and

a thin profile battery conductively bonded with the second portion of the conductive paths by a conductive adhesive;

wherein the dipole antenna has first and second portions which define, in operation, first and second poles of the dipole antenna, respectively, and wherein the integrated circuit includes a transmitter and a receiver, the transmitter being switchable between a backscatter mode, wherein a carrier for the transmitter is derived from a carrier received from an interrogator and the integrated circuit alternately reflects or does not reflect the carrier from the interrogator by shorting or isolating the first and second portions of the dipole antenna to transmit data to the interrogator, and an active mode, wherein a carrier for the transmitter is generated by the integrated circuit itself, the transmitter being configured to switch between the backscatter and active modes in response to a radio frequency command received by the receiver.

76. (Currently Amended) The device of claim 68 wherein the dipole antenna has first and second portions which define, in operation, first and second poles of the dipole antenna, respectively, and wherein the integrated circuit includes a transmitter and a receiver, the transmitter selectively transmitting a signal using a modulation scheme, the transmitter being

capable of transmitting using modulated backscatter modulation and also capable of transmitting using any of the following active modes: Frequency Shift Keying (FSK), Binary Phase Shift Keying (BPSK), Direct Sequence Spread Spectrum (DSSS), On-Off Keying (OOK), Amplitude Modulation (AM).

77. (Previously Presented) The device of claim 68 wherein the antenna is printed onto the substrate.

78. (Currently Amended) A radio frequency identification (RFID) device, comprising:

a substrate;

a battery;

an RFID integrated circuit mounted on the substrate; and

a cured adhesive including a silane and an epoxy configured to be conductive at least after being cured, the cured adhesive applied between the battery and the substrate;

wherein the adhesive is cured into an electrically conductive bond electrically coupling the battery to the substrate to connect the RFID integrated circuit to the battery.

79. (Currently Amended) The radio frequency identification (RFID) device of claim 78, further comprising:

a dipole antenna provided on the substrate and coupled to the RFID integrated circuit;

wherein the battery is a thin profile battery; and

wherein the cured adhesive is interposed between the thin profile battery and the substrate to couple the RFID integrated circuit to the battery.

80. (Currently Amended) The radio frequency identification (RFID) device of claim 78, wherein the substrate is flexible; the substrate includes a flexible conductive path; the RFID integrated circuit is coupled to the flexible conductive path; and the cured adhesive is interposed between the battery and the flexible conductive path to electrically couple the battery to the flexible conductive path.

81. (Previously Presented) The radio frequency identification (RFID) device of claim 78, wherein the substrate is flexible; the battery has a terminal; the substrate includes a conductive path printed on the flexible substrate; the RFID integrated circuit is electrically coupled to the conductive path; the cured adhesive is applied to at least one of the printed conductive path and the terminal of the battery to engage the terminal of the battery with the conductive path; and the adhesive is cured to electrically couple the terminal of the battery to the printed conductive path.